

ABSTRACT

To produce an AC electric current, the inverter is one of the most reliable electronic devices, where the AC current that can be used is in the form of a sinusoidal output waveform in order to have high efficiency. One way to get a sinusoidal wave output voltage from the single-phase inverter, it is necessary to modulate the pulse width or determine the sampling time (sample time) by using the MCU C2000 microcontroller as a Pulse Width Modulation (PWM) voltage generator.

The author will investigate the effect of pulse width modulation deadband on a single phase inverter. The inverter wave that will be made is a sinusoidal wave. Based on the measurement results, the THD value of the voltage is 1.32%, and the calculation results of the inverter efficiency value before the transformer is 94% and the inverter efficiency value after the transformer is 75% at a load of 100Watt. Deadband does not have a significant effect on the value of THD voltage and efficiency value.

Keywords: Single Phase Inverter, Pulse Width Modulation, Deadband, MCU C2000, Sinusoidal.